

found besides those observed by him. At pages 6-39 follow descriptions of 13 (?) species:—I. Ferns: *Sphenopteris*, 1; *Glossopteris*, 4, including *Vertebraria*. II. Uncertain: *Dictyopteridium*, 1. III. Equisetinææ: *Schizoneura*, 2; *Phyllothea*, 1. IV. Corditææ: *Noeggerrathiopsis*, 1. V. Cycadinæ: *Cycadites*, 1; *Salisburiaea*, ?; *Feistmantella*, 1. VI. Coniferæ: *Araucarites*, 1. VII. Seeds of Gymnosperms: *Cardiocarpus*, 2; *Voltzia*, ?.

An alphabetical list of 43 species described or cited in the present memoir, with their localities, is given at page 40.

MISCELLANEOUS.

Cyclops rubellus, Lilljeborg.

To the Editors of the 'Annals and Magazine of Natural History.'

GENTLEMEN,—On 2nd May, 1901, my father and I found in Loughrigg Tarn, near Windermere, several specimens of a small *Cyclops* which, though closely resembling both *C. bicolor* and *C. varicans*, differed from both in certain well-marked particulars. We found ourselves unable to refer our specimens to any known British species; but when Professor Lilljeborg's work on the Swedish Cladocera was published and came into our possession, we were able at once to identify them with *C. rubellus*, which is intermediate between the two above-named species. We wrote to Professor Lilljeborg on the subject, and he kindly sent us specimens to compare with our own, thereby enabling us to put the identity of our British specimens beyond question. We have therefore to add the name of *Cyclops rubellus*, Lilljeborg, to the list of the British Entomostraca.

The following is abridged from our translation of Professor Lilljeborg's description, which he has kindly revised:—

"The female varies from .6 to .9 millim. in length. It appears somewhat thick-set, having an ovate, moderately broad cephalothorax, though the abdomen is comparatively slender. The first thoracic segment is longer than the abdomen without the apical bristles. The fifth thoracic segment bears on each side a rather large bristle, directed backwards. The abdomen is slightly more than half the length of the cephalothorax, and its first segment is equal to the three following taken together. The stylets are short and broad, set closely together, and very slightly divergent. Their length is about equal to the distance between the hinder margin of the last abdominal segment and the middle of the last segment but one. The bristle on the outer margin of each stylet is small and is situated about three quarters of the way down. The outermost apical bristle is moderately stout, and shorter than the innermost

one. The inner of the two intermediate apical bristles is considerably longer than the outer and usually rather longer than the abdomen. The lateral bristles (or cilia) on the proximal parts of these bristles are short and thin. The anterior antennae when laid back do not reach the hinder margin of the first thoracic segment. In old and large specimens they contain twelve joints, and in smaller and younger but clearly mature specimens ten or eleven joints. The feet of the first four pairs have two-jointed branches. In the first pair the second joint of the outer branch has on the outer margin three spines and on the inner three bristles, and at the tip two terminal bristles. In the second and third pairs this joint has three spines and four bristles and a terminal bristle and spine, and in the fourth pair two spines and four bristles and a terminal bristle and spine. The fifth foot consists only of a very small rod-shaped joint, which has at the tip a small bristle.

"The male is decidedly smaller than the female. Its length without the apical bristles is from .52 to .74 millim. It is somewhat slenderer than the female and has, like it, a comparatively long first thoracic segment, which is slightly longer than the abdomen without the apical bristles. The stylets are somewhat shorter than in the female and are about the same length as the two last very short abdominal segments taken together. The anterior antennae have fourteen or fifteen joints, and have on the basal joint two pairs of long, narrow, cylindrical, blunt, and papillated so-called 'sensory' clubs.

"Both sexes are more or less reddish in colour, though subject to variation, being darker or lighter or inclined to greyish red. The cephalothorax is usually lighter than the abdomen. The egg-clusters are narrow and generally contain six to eight eggs.

"This species is found sporadically throughout Sweden, but is not common. It occurs for the most part only in small bogs, but is sometimes also found near the shores of large pools. It is a bottom form. It resembles *C. varicans* in its movements."

The above description applies exactly to our British specimens, save that in the latter (1) the first thoracic segment is not "longer than the abdomen without the apical bristles," but slightly shorter; and (2) the side bristle on the stylet is situated about two thirds instead of three quarters of the way down. Our mature female specimens were about .70 or .75 millim. in size and their antennae contained eleven joints. We found no males.

I am,

Yours faithfully,
BEATRICE SPRAGUE.

29 Buckingham Terrace,
Edinburgh.
Nov. 1902.